Amendments to the Specification

Replace the two paragraphs beginning at the bottom of page 2 and ending at the bottom of page 3 with the following paragraph:

Referring to Figure 1, raw [[An]] image data 10 to be compressed is first decomposed into components (step 12). For example, an image represented in an RGB color format may be decomposed into three separate color components. The image components are then each divided into tiles (step 14). The tiles are rectangular arrays applied in the same manner to each of the image components. The tile-components are further decomposed into different decomposition levels using a wavelet transform (step 16). The wavelet transform decomposition levels contain a number of sub-bands populated with coefficients that describe horizontal and vertical spatial frequency characteristics of the original tile-component planes (step 18). The coefficients provide local frequency information, and each wavelet decomposition level is related to the next decomposition level by spatial powers of two. In other words, each successive decomposition level of the sub-bands has approximately half of the horizontal and half of the vertical resolution as the previous level.

Even though there may be as many wavelet transform coefficients as original image samples, the information content following the wavelet transform tends to be concentrated into a relatively few coefficients. Using quantization, the information content can be further concentrated in the wavelet transform coefficients. Following quantization, the individual sub-bands of a tile component are divided into rectangular arrays of coefficients, referred to as code-blocks (step 20). The individual bit-planes of the coefficients in a code block are then entropy coded in three coding passes (step 22). Each of the coding passes collects contextual information about the bit-plane data and the arithmetic coder uses the contextual information and its internal state to generate coded data 24 that can then be formed into a compressed bit-stream (step 26).

At page 6, insert the following paragraph after the paragraph beginning with "Figure 2 is":

Figure 3 is a flow diagram of an embodiment of a method of encoding image data in which coefficient data from at least one bit-plane is included in an encoded bit-stream without arithmetic coding.

At page 29, insert the following paragraphs before the paragraph beginning with "An additional modification to":

Referring to Figure 3, in one embodiment, raw image data 10 to be compressed is first decomposed into components (step 12). For example, an image represented in an RGB color format may be decomposed into three separate color components. The image components are then each divided into tiles (step 14). The tiles are rectangular arrays applied in the same manner to each of the image components. The tile-components are further decomposed into different decomposition levels using a wavelet transform (step 16). The wavelet transform decomposition levels contain a number of sub-bands populated with coefficients that describe horizontal and vertical spatial frequency characteristics of the original tile-component planes (step 18). The coefficients provide local frequency information, and each wavelet decomposition level is related to the next decomposition level by spatial powers of two. In other words, each successive decomposition level of the sub-bands has approximately half of the horizontal and half of the vertical resolution as the previous level.

Even though there may be as many wavelet transform coefficients as original image samples, the information content following the wavelet transform tends to be concentrated into a relatively few coefficients. Using quantization, the information content can be further concentrated in the wavelet transform coefficients. Following quantization, the individual sub-bands of a tile component are divided into rectangular arrays of coefficients, referred to as code-blocks (step 20). The individual bit-planes of the coefficients in a code block are then entropy coded in three coding passes. Each of the coding passes collects contextual information about the bit-plane data. If a bit plane p corresponds to one of the more significant bit planes satisfying the condition $p \geq p_0\text{-}K$ (step 30), the bit plane undergoes all coding passes (step 32). The data generated during each coding pass is passed to the arithmetic coder 34, which uses the contextual information and its internal state to generate coded data 36 that can then be formed into a compressed bit-stream 42. For a bit plane p corresponding to the less significant bit planes satisfying the condition $p < p_0\text{-}K$ (step 30), all

of the binary symbols generated in the significance propagation and magnitude refinement coding passes (step 38) are written directly into the bit stream 26 as raw binary bits 40, entirely bypassing the arithmetic coder 34. Only the binary symbols generated during the normalization coding pass are passed to the arithmetic coder 34.